

## **Follow up from LWG/NMFS/EPA Mitigation Matrix Meeting (June 22, 2010)**

### **Habitat Values Table**

During the June 22, 2010 Mitigation Matrix Meeting between the Lower Willamette Group (LWG), National Marine Fisheries Service (NMFS), and U.S. Environmental Protection Agency (EPA), the LWG proposed an approach to allow for a range of relative habitat values for some habitat categories to be used to determine potential Clean Water Act (CWA) Section 404 mitigation offsets related to remedial alternatives being evaluated in the Feasibility Study (FS). At the end of the meeting, the LWG agreed to identify a list of direct issues and/or questions for consideration by NMFS.

### **Policy/Framework Comments:**

The LWG believes that the opportunities for implementing meaningful and cost-effective habitat improvements within Portland Harbor are limited. The LWG also believes that the mitigation framework offers a good opportunity to provide incentives for habitat improvement along many reaches of the Willamette River. The habitat values provided by NMFS offer a solid starting point for developing the mitigation framework; however, some of the fixed values put forth by NMFS offer little or no incentives for improving habitat and could preclude consideration of remedial alternatives that attempt to jointly optimize remediation and habitat benefits. The LWG believes the net result could be that few on-site opportunities for habitat improvement would be implemented given the current values, and that nearly all of the mitigation would be provided at a few off-site or off-channel locations, leaving the majority of the site with the same habitat that currently exists, in some cases, with an even lower value habitat. The LWG worries that this will not further recovery of Endangered Species Act (ESA) -listed species in the Willamette River.

#### **Comment 1:**

Early engagement of NMFS should assist EPA and the LWG in the development of the alternatives to be evaluated in the FS, with the habitat matrix providing the framework to satisfy CWA 404 requirements for mitigation with respect to those alternatives. After the development of the FS, EPA and NMFS will have the opportunity to evaluate the application of the matrix to the project as a whole to ensure compliance with ESA.

#### **Comment 2:**

The LWG recognizes that more discussion may be needed to ensure that the relative values between habitat types will correctly create the right balance of incentives for the harbor. The LWG believes that early involvement of NMFS and input from NMFS into the FS will be beneficial in this regard.

### **LWG Clarifications and Perspectives**

The LWG has developed the following responses as requested by NMFS to clarify the technical discussion that occurred on June 22, 2010.

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### **LWG Supports the Concept of Habitat Ranges for Two Reasons:**

1. From a scientific perspective, the relationship between quantity and quality of habitat, and fish production and productivity is inherently uncertain. The scientifically appropriate way to capture this uncertainty is to use a range of habitat values.
2. From a policy perspective, using a range of habitat values encourages site-by-site evaluation of habitat function and encourages site-specific efforts to achieve the highest possible on-site mitigation value. An example of how the values will be used in the matrix to determine potential acres of mitigation debit or credit for evaluation in the FS is provided at the end of page 2 of the “LWG Comments on the NOAA/NMFS Habitat Values for Salmonids” meeting handout.

**LWG Has Evaluated the Portland Harbor Habitat Opportunity and Found it Limited:** The LWG believes that the habitat opportunities in Portland Harbor are very limited and that incentives to use on-site opportunities are an important element of the overall goal of improving habitat.

### **LWG Supports the Use of Riparian—Vegetated Riprap (and Bioengineering Treatments) and Believes these Treatments Should Be Encouraged through Appropriate Valuation:**

Under the current framework, a complex vegetated riparian slope that incorporates riprap to ensure slope stability and isolation of contaminated soils would be rated very low (0.05). Further, the current framework for riparian habitat does not include any bioengineered treatments, and the current footnoted definition of bioengineering (applicable only to the active channel margin habitat) would not include any treatment where any inert materials were the primary means of stabilizing the cap or the bank itself. Given this value and these definitions, in circumstances where contamination in a riparian area needs to be capped to ensure protectiveness, it is highly unlikely that any Potentially Responsible Party (PRP) would invest in vegetation as part of that remedial action. The result is likely to be a lack of vegetation along the remediated shorelines of Portland Harbor. The LWG proposed values and expanded definitions would allow for a range of values to account for the resulting characteristics (i.e., resulting habitat value) of the vegetated riprap or bioengineering and provide an incentive to create habitat. The lower and upper bounds of the range were defined as follows:

- 0.05 – few species and vegetation layers (e.g., shrubs with no trees) and low stem densities and canopy cover.
- 0.5 – complex layers with multiple species (e.g., ground cover, shrubs, and trees) and high stem density and canopy cover.

### **LWG Recognizes the Need For Bioengineered Shoreline Treatment within the Active Channel Margin and Believes these Treatments Should be Encouraged through**

**Appropriate Valuation:** Within Portland Harbor there is a zone located from the U.S. Army Corps of Engineers (USACE) -defined Ordinary High Water (OHW) line to about 3 feet below (typically 10 to 20 feet wide) that can support woody vegetation. The LWG sees this zone as an important opportunity to provide high-flow refuge habitat within the designated critical habitat for the juveniles of several species of ESA-listed salmonids. This zone is also subject to erosion and, therefore, riprap or other rock is expected to be needed as part of many remedial actions to hold the caps in place to ensure that contaminant pathways to the aquatic system are cut off. The

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current NMFS-updated habitat values table would assign a value of 0 to any action that included riprap and a value of 0.2 for a bioengineered solution which, under the current definition, could not include any treatment where any inert materials were the primary means of stabilizing a protective cap, something not likely to be deemed protective given the expected range of hydrodynamic forces within Portland Harbor. Similar to the situation with riparian vegetation, given these low values, it is highly unlikely that any PRP would invest in bioengineering, nor would vegetation be incorporated into an area that also functions as a cap. The LWG believes that if the resulting riparian area is shown through monitoring to include complex layers with multiple species, high stem density, and canopy cover that functions similarly to a naturally vegetated shoreline, it should result in a habitat value that is similar to a naturally vegetated shoreline. The LWG-proposed values allow for a range to account for the resulting function of the bioengineered shoreline with the lower and upper bounds of the range defined as follows:

- 0.2— few species and vegetation layers (e.g., shrubs with no trees) and low stem densities and canopy cover.
- 0.8—complex layers with multiple species (e.g., ground cover, shrubs, and trees) and high stem density and canopy cover.

The LWG believes that vegetation should be encouraged within the active channel margin and that it could contribute to salmon habitat improvement even if it entails the use of riprap or other inert materials to provide structure.

**Active Channel Margin – Definition of Vegetated Shorelines (with either <5:1 slopes or >5:1 slopes):** In the NMFS ESA habitat value table, vegetated (natives) shorelines in the active channel margin for slopes less than and greater than 5:1 have relative habitat values ranging from 0.8 to 1.0 (if vegetated with invasive species, values range from 0.7 to 0.9). In Portland Harbor, it is possible to have an existing shoreline that is vegetated with grasses and scattered native species, as well as a shoreline that is vegetated with mature trees and shrubs that are continuous across the length of the shoreline. Both of these conditions could be considered vegetated, yet they provide different degrees of habitat function. Under the NMFS version of the habitat value table, both of these conditions could receive the same value. The LWG proposes a range of values based on the degree to which the shoreline is vegetated to account for these differences, as specifically described in the “LWG Justification” column of the table.

**Active Channel Margin and Main Channel – Definition of “Unarmored”:** Based on our discussion, it is LWG’s understanding that gravel (<64 mm) that is placed on top of the cap armor (riprap) and demonstrated to be stable or dynamically stable in a manner similar to native substrate, will be considered “unarmored.” Additionally, LWG wants to confirm that placement of sand and gravel (<64 mm) material in a dredged area to return to existing grade is also considered “unarmored.”

**The LWG Believes that Habitat Values Need to Be Applied Consistently:** In the NMFS habitat value table, values are not applied consistently for both debits and credits. The LWG believes that the habitat values need to be applied consistently whether as a debit (impact) or a credit (mitigation). One note at the bottom of the table indicates that, “credit for simply removing pilings is limited to 0.1 and for removing covering structures is limited to 0.5.” This is a good example of where the debit associated with the impact is larger than the credit. If

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covering structures or pilings are assumed to result in large reductions in functions, then their removal must result in the same magnitude of benefit. Similarly, although the NMFS table notes indicate that no credit will be given for any new habitat with riprap or covered structures, the table applies debits if such habitat is impacted.

**A Note at the Bottom of the Table Indicates that “Debits and credits for a given project need to come from the same habitat category (eg. main channel), unless credits come from creating off channel habitat because it is a primary limiting factor for salmonids.”:** The relative habitat values are all scaled to an “ideal” habitat condition, such that differences due to habitat categories are already accounted for in a Habitat Equivalency Analysis (HEA). The NMFS approach of constraining the use of credits seriously hinders the HEA and sets up a very different credit process between mitigation and the Natural Resource Damage (NRD) settlement.

**A Note at the Bottom of the Table Indicates that “For ESA purposes, shallow water habitat is defined as <20 feet of water depth as measured at the ordinary low water elevation.”:** During the meeting we discussed the LWG proposal to divide the shallow water category into two subcategories—0 to 10 feet of water depth from OLW and 10 to 20 feet of water depth—and place a higher value on the 0 to 10 feet of water depth from OLW. The higher value for salmonids between 0 and 10 feet of water depth is supported by results of studies conducted on the Lower Willamette and Columbia Rivers. Specifically, Oregon Department of Fish and Wildlife (ODFW 2005) found that catches of juvenile salmonids were generally higher at sites with shallow depths between 0 and 3 meters (10 feet) than at deeper depths. In addition, a number of studies have shown that salmon fry and fingerlings often remain in water depths between approximately 10 centimeters and 2 meters (6.6 feet) (NMFS 2005).

## References

NMFS (National Marine Fisheries Service). 2005. Salmon at River’s End: The Role of the Estuary in the Decline and Recovery of Columbia River Salmon. NOAA Technical Memorandum NMFS-NWFSC-68. August 2005.

ODFW (Oregon Department of Fish and Wildlife). 2005. Biology, Behavior, and Resources of Resident and Anadromous Fish in the Lower Willamette River, Final Report of Research, 2000-2004. Edited by Thomas Friesen, ODFW. Prepared for City of Portland Bureau of Environmental Services, Endangered Species Act Program.

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